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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,671	12/05/2003	Toshiya Kishida	1075.1239	8473
21171	7590	05/26/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			STEIN, JAMES D	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 05/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,671	KISHIDA ET AL.	
	Examiner	Art Unit	
	James D. Stein	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,8,9,19,20,22 and 25-27 is/are rejected.
- 7) ☒ Claim(s) 2-7,10-18,21,23 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.

Claims 1, 8, 9 and 19-20 are rejected under 35 U.S.C. 102(e) as being anticipated by [USPAT 6,781,736] to Hoyt et al, which discloses (referring to Figs. 3 and 4A):

With regard to claim 1, Hoyt et al discloses a variable optical attenuator comprising: an input/output optical system 400 to which are connected a plurality of input optical fibers 404 and a plurality of output optical fibers 408 and which has a plurality of input lenses (also 404) for taking beams 402 having entered by way of said input optical fibers as input beams and a plurality of output lenses (also 408) for gathering output beams 406 to be coupled to said output optical fibers, to thereby couple said output beams to said output optical fibers 408 (see description, col. 12 lines 24-29); a birefringent device 410 provided on an output side of said input/output optical system; a liquid crystal device 420 capable of changing polarizing states of said input beams exiting said birefringent device 410 (see description of LC device 420, col. 1 lines 31-39); and a reflection device 430 which reflects beams passing through said liquid-crystal device so that the beams return to said output lens 408 of said input/output optical system by way of said liquid-crystal device 420 and said birefringent device 410 (see entire document and col. 12 lines 30-36 and col. 5 line 58 – col. 6 line 13).

With regard to claims 8 and 9, in addition to the rejection of claim 1 previously discussed above, the examiner notes to applicant that the input fibers/micro-lenses 404 and output fibers/micro-lenses 408 are disclosed to be in *array* form (col. 12 lines 24-29), which the examiner feels constitutes a *block*, as claimed by applicant. Fig. 4A shows said blocks “arranged in the same direction as that in which the optical fibers are arranged,” as claimed by applicant. Furthermore, since the diameter of a collimating lens is generally larger than the diameter of the respective fiber it is coaxially associated with, the examiner argues that the pitch between said input optical fibers and said output optical fibers *must* be greater than a pitch between said input lenses and a pitch between said output lenses.

With regard to claims 19-20, in addition to the rejection of claim 1 previously discussed above, Fig. 2 of shows a the LC device 120/420 comprising a plurality of plurality of sets (4 portions of 210), each set comprising liquid crystal 202 and electrodes (210, 208) to be used for applying an electric field to said liquid crystal, for controlling a polarizing state of said liquid-crystal device 120/420 for each beam exiting said input optical fibers and controlling polarizing states of the liquid-crystal device 120/420 for different respective polarizing components of said input light separated by said birefringent device (see description col. 7 lines 3-24). It is noted to applicant that a voltage applied across the electrodes (210, 208) will inherently cause a proportional electric field therebetween, across the liquid crystal layer 202.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoyt et al. as applied above, and further in view of [USPAT 5,727,109] to Pan et al, which discloses another optical attenuator. Hoyt et al. have disclosed the claimed invention as discussed above except for a second birefringent device provided on an output side of said liquid crystal device. Fig. 10 of Pan et al. shows a second birefringent device 54 provided on an output side of the device. At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the device as taught by Hoyt to include a second birefringent device on the output side of the liquid crystal device in order to allow the output fibers to be on an opposite end of the device from the input fibers.

With regard to claims 25-27, all limitations have been disclosed and previously discussed above in the rejections of claims 8, 9, 19 and 20.

Allowable Subject Matter

Claims 2-7 and 23-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited prior art discloses or suggests the optical attenuator device as discussed above, further comprising the birefringent device, the liquid-crystal device, and the reflective device are integrated together.

Claims 10-12 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited prior art discloses or suggests the optical attenuator device as discussed above, further comprising a prism unit which is interposed

Art Unit: 2874

between said fiber array block and said lens array block and which reflects a portion of incident light in a direction crossing the direction of an optical axis; and a light-receiving unit for monitoring input and output light which receives the light reflected from said prism unit.

Claims 13-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited prior art discloses or suggests the optical attenuator device as discussed above wherein said reflection device is formed from a coupler film which permits transmission of a portion of the light exiting the liquid-crystal device; and an input light monitor light-receiving unit for receiving the light having passed through said coupler film is provided on the surface of said coupler film.

Claims 16-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the cited prior art discloses or suggests the optical attenuator device as discussed above, further comprising an output light monitor light-receiving unit for receiving the light that is not coupled to said output optical fiber as a result of a variation in the polarizing state of said liquid-crystal device from among the beams reflected from said reflection device. Although the Hoyt et al. reference incorporates a monitor 150, it utilizes a reference beam rather than the portion of light not coupled to the output fibers as a result of a variation in the polarizing state of the liquid crystal device from among the beams reflected from said reflection device.

Claims 21 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and

Art Unit: 2874

any intervening claims. None of the cited prior art discloses or suggests the optical attenuator device as discussed above, wherein the liquid-crystal device is formed from liquid-crystal molecules and glass plates to be used for sandwiching said liquid-crystal molecules, and said reflection device is formed on the surface of one of said glass plates.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: [USPAT 6,055,104] to Cheng, which discloses a related variable optical attenuator.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

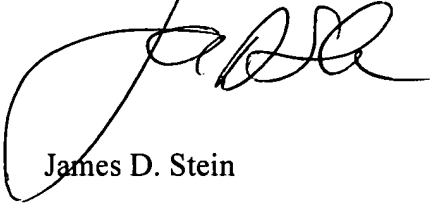
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

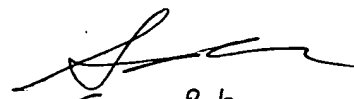
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

Art Unit: 2874

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



James D. Stein



Sung Pak
Patent Examiner
AU 2874